

**THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF MASSACHUSETTS**

Civil Action No. 04 12389 MLW

---

\_\_\_\_\_  
Louis M. Gerson Company., Inc.,      )  
    )  
Plaintiff                              )  
    )  
v                                      )  
    )  
3M Company,                        )  
    )  
Defendant                            )  
\_\_\_\_\_  
    )

**Memorandum of Law in Opposition  
to Defendant's Motion to Dismiss**

The Plaintiff, Louis M. Gerson Company, Inc., (the “Gerson Company”) opposes the Defendant’s Motion to Dismiss. The Motion is grounded in a Covenant Not to Sue on a single patent, US no. 6,595,441 (the “441 patent”). However, the Gerson Company’s Amended Complaint and its pending Supplemental Complaint seek a Declaratory Judgment with respect to the validity, enforceability, and alleged infringement of all of the Defendant’s patents “related to paint systems”, including US no. 6,820,824, a patent just issued on November 23, 2004 (the “824 patent”). 3M Company’s (“3M”) Covenant Not to Sue does not apply to this patent, nor does it apply to at least 14 other patents raised and at issue in the Amended Complaint and the pending Supplemental Complaint. As a matter of law, a Covenant which fails to release claims for all patents in suit is insufficient as a basis for dismissal of the Amended Complaint or the pending Supplemental Complaint.

**1. The Covenant Does Not Extinguish An Actual And Material Controversy Between The Parties**

The Gerson Company agrees with 3M that an action must be dismissed for lack of subject matter jurisdiction where there is no case or controversy. However, 3M is wrong in arguing that its Covenant Not to Sue abrogates the case or controversy and the court's subject matter jurisdiction in this lawsuit. The Covenant offers to release just one patent. Yet, as noted in the Opposition, the Gerson Company's Amended Complaint and pending Supplemental Complaint are *not* limited to a single patent but, rather, contest *all* of 3M's "patents related to paint systems". *See* the Gerson Company's Amended Complaint at paragraphs 5,6. In sum, even if it is argued that 3M has mooted the case or controversy with respect to the '441 patent, this has no impact whatsoever on the material dispute which continues with respect to 15 other 3M patents. Moreover, it is clear that 3M will not terminate this dispute by offering a Covenant on these patents and, in particular, its recently issued '824 patent.

3M has failed here to release *all claims on all patents* in suit and has no intention of releasing all claims. Its Covenant Not to Sue is a ploy to avoid litigation in this District. In fact and in an effort to gain home court advantage, 3M has recently filed suit in the District of Minnesota against the Gerson Company for infringement of the '824 patent.<sup>1</sup> Notwithstanding the ploy, the Covenant is simply insufficient to abrogate a case or controversy or to extinguish the trial court's subject matter jurisdiction because all of the remaining patents in suit remain in dispute before this court, including the very patent 3M wants to litigate in Minnesota. *See In Re*

---

<sup>1</sup> The Gerson Company will be filing a Motion to Dismiss 3M's lawsuit in Minnesota under the First to File Rule and for lack of personal jurisdiction.

*Columbia University Patent Litigation*, \_\_ F. Supp.2d \_\_, 2004 WL 2490619 (Nov. 5, 2004, Wolfe, DJ) at 6.

2. **The Covenant Is Insufficient Even With Respect To The '441 Patent**

To the extent that the Defendant's Motion to Dismiss is understood as a *partial* Motion to Dismiss which applies only to the '441 patent, it is still insufficient because the Covenant Not to Sue is not offered also by 3M Innovative Properties Company, ("3M IP"), the assignee and owner of the '441 patent and other paint system patents in suit. *See e.g.* Exhibit 1, the '441 patent at p.1. 3M IP is a necessary party to any valid covenant releasing all patent claims against the Gerson Company. Indeed, 3M IP may be the essential party to a Covenant Not to Sue because it is the owner of the '441 patent and other patents in suit while 3M is a mere licensee of most of the patents in dispute.<sup>2</sup>

As assignee and owner of the '441 patent and other patents in suit, 3M IP has rights to enforce its patents independently of 3M.<sup>3</sup> *Waterman v MacKenzie*, 138 U.S. 252 (1891), *Pandrol USA, LP v Airboss Ry. Products, Inc.*, 320 F.3d 1354, 1367-68 (Fed. Cir. 2003). Without 3M IP as a party to the Covenant Not to Sue, the Gerson Company has no substantive protection under the Covenant. A release by 3M is of no consequence if the patent owner, 3M IP, is not party to and is not bound by the Covenant. 3M IP's independent patent rights and claims are not extinguished by 3M's unilateral Covenant. *See H.R. Techs, Inc. v Astechnologies, Inc.*, 275 F.3d 1378 (Fed. Cir. 2002). Clearly, this means both 3M and 3 M IP are necessary parties to a valid Covenant; and the trial court should not consider any Covenant Not to Sue,

---

<sup>2</sup> As far as is known from the record in this case, 3M's license from 3M IP does not include a right to bind 3M IP under a Covenant Not to Sue.

<sup>3</sup> In its pending Supplemental Complaint, the Gerson Company has added 3M IP as a Necessary party Defendant.

even if reaches just the '441 patent, if the Covenant does not bind both the owner and licensee of patents in suit.

### **3. A Proper Covenant Must Release All Claims On All Patents In Suit**

As argued above, a case or controversy exists and the trial court has subject matter jurisdiction unless and until 3M and 3M IP release all claims on all patents in suit, including the recently issued '824 patent (which 3M and 3M IP are attempting to press in the District of Minnesota). A proper covenant not to sue should extend to (1) any paint system product currently used, manufactured, offered for sale, or sold by the Gerson Company and (2) any paint system product which was used, manufactured, offered for sale, or sold by the Gerson Company prior to the date of the covenant, and (3) any paint system product which is substantially equivalent to the paint system products described in the foregoing. A release incorporating these provisions will reasonably safeguard the Gerson Company from apprehension of infringement litigation on its current paint system products and on those which are substantially equivalent.

*See Columbia University Patent Litigation* at 7.

A covenant not to sue forecloses the claims in the patents in dispute from any further litigation against the alleged infringer's products. In this case, there is a particular need also to include substantial equivalents in the reach of the covenant. In contrast to the *Columbia University Patent litigation* and related cases, the dispute with 3M and 3M IP is completely without claims construction or any other statement of what is alleged to have been infringed. Consequently, there is no bright line to identify infringing or non infringing components of the Gerson Company's current paint system products. In short, neither the trial court nor the Gerson Company can define what is protected or excluded by a covenant not to sue in this circumstance. And without additional safeguard, it takes little imagination to expect further lawsuits by 3M and

3M IP, claiming infringement by virtually any variation to the current paint system or even a component of the paint system.

If the covenant not to sue is to have substantive reach, if it is to safeguard the Gerson Company, and it is to bar infringement litigation, then it should bar every infringement claim that can reasonably rise from the patents that are released. Absent claims construction as a bright line guide, a release extending to substantial equivalents is a reasonable safeguard against apprehension of infringement litigation.

Consequently, to give substantive force and effect to any Covenant offered by 3M and 3M IP, substantial equivalents should be included. To proceed otherwise is to accept a Covenant which is largely incapable of definition, which leaves the Gerson Company without the protection promised, and which surely invites further litigation.

## **CONCLUSION**

For the reasons stated, the trial court should deny 3M's Motion to Dismiss. A case or controversy continues here and the trial court maintains subject matter jurisdiction for so long as 3M and 3M IP refuse to release all of the patents in suit and, in particular, the '824 patent. And any patent which is released by covenant should extend to both current products and substantial equivalents.

Dated: December 7, 2004

Respectfully submitted,  
LOUIS M. GERSON COMPANY, INC.  
By its attorneys,

/s/ Robert L. Kann  
Robert L. Kann (BBO # 258025)  
Edward J. Dailey (BBO #112220)  
Robert M. Asher (BBO # 022865)  
BROMBERG & SUNSTEIN LLP  
125 Summer Street  
Boston, Massachusetts 02110-1618  
(617) 443-9292  
(617) 443 0004 (fax)  
Dated: 12.07.04

**Certificate of Service**

I certify that a copy of this pleading has been forwarded to Frank E. Scherkenbach, Esq.,  
FISH & RICHARDSON PC, 225 Franklin Street, Boston, Massachusetts 02110 electronically  
by pdf and also by USPS First Class Mail.

/s/ Edward J. Dailey

Edward J. Dailey

02633/00514 350320.1

TAB "A"

**(12) United States Patent**  
Petrie et al.

(10) Patent No.: US 6,595,441 B2  
(45) Date of Patent: Jul. 22, 2003

(54) **MIXING CUP ADAPTING ASSEMBLY**

4,811,904 A	3/1989	Ihmels et al.
4,946,075 A	8/1990	Lundback
4,993,639 A	2/1991	Hata
5,069,389 A	12/1991	Snetting et al.
5,271,683 A	12/1993	Snetting
5,601,212 A	*	Lee ..... 222/205
5,803,367 A	9/1998	Heard et al.
6,165,159 A	12/2000	Blanton
6,302,445 B1	*	Kugele et al. ..... 285/360

(75) Inventors: **Robert M. Petrie**, Plymouth, MN (US);  
**Stephen C. P. Joseph**, Hartshill (GB);  
**Keith C. Navis**, White Bear Lake, MN  
(US); **David C. Roeker**, Hudson, WI  
(US)

(73) Assignee: **3M Innovative Properties Company,**  
**St. Paul, MN (US)**

(\*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: 10/139,887

(22) Filed: May 6, 2002

(65) **Prior Publication Data**

US 2002/0134861 A1 Sep. 26, 2002

#### Related U.S. Application Data

(63) Continuation of application No. 09/374,794, filed on Aug 16, 1999.

(51) Int. Cl.<sup>7</sup> ..... B05B 7/30  
(52) U.S. Cl. ..... 239/345; 239/318; 239/340  
..... 239/74

(58) **Field of Search** ..... 285/360, 376  
285/401; 239/345, 340, 337, 347, 350  
318, 378, 74; 222/189.06, 481, 158; 141/383  
346, 385, 384

(56) **References Cited**

## U.S. PATENT DOCUMENTS

856,361	A	6/1907	Nelburg
1,476,666	A	12/1923	Agnew, Sr.
2,263,843	A	11/1941	Gross
2,612,404	A	* 9/1952	Andersson .....
2,770,706	A	11/1956	Vogtle et al.
2,901,182	A	8/1959	Cragg et al.
4,411,397	A	10/1983	Stern et al.
4,773,569	A	9/1988	Larson

#### FOREIGN PATENT DOCUMENTS

CH 653-574 A 1/1986  
DE 2412743 A 1/1975  
WO WO 98/32539 \* 7/1998

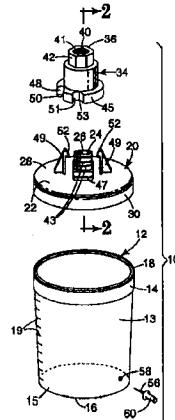
\* cited by examiner

*Primary Examiner*—Michael Mar  
*Assistant Examiner*—Christopher Kim  
*(74) Attorney, Agent, or Firm*—William L. Huebs

(57) **ABSTRACT**

An assembly for feeding liquid to the inlet port of a gravity feed sprayer. The assembly includes (1) a mixing cup of a known type commonly used to mix paint with solvent that is of stiff polymeric material and bears indicia on its side wall indicating the levels to which a plurality of different liquids should be sequentially poured into the cup to achieve a predetermined ratio between the liquids; (2) a first adapter comprising a central portion having a through opening and a transverse portion including a peripheral part defining a groove along its inner surface adapted for sealing engagement with a top end of the mixing cup; and (3) a second adapter having a through opening, a first end portion of which second adapter is adapted to releasably engage the inlet port of a gravity feed paint sprayer. A second end portion of the second adapter and the central portion of the first adapter have connector parts adapted for releasable liquid tight engagement between the adapters with their through openings in communication.

## 5 Claims, 4 Drawing Sheets

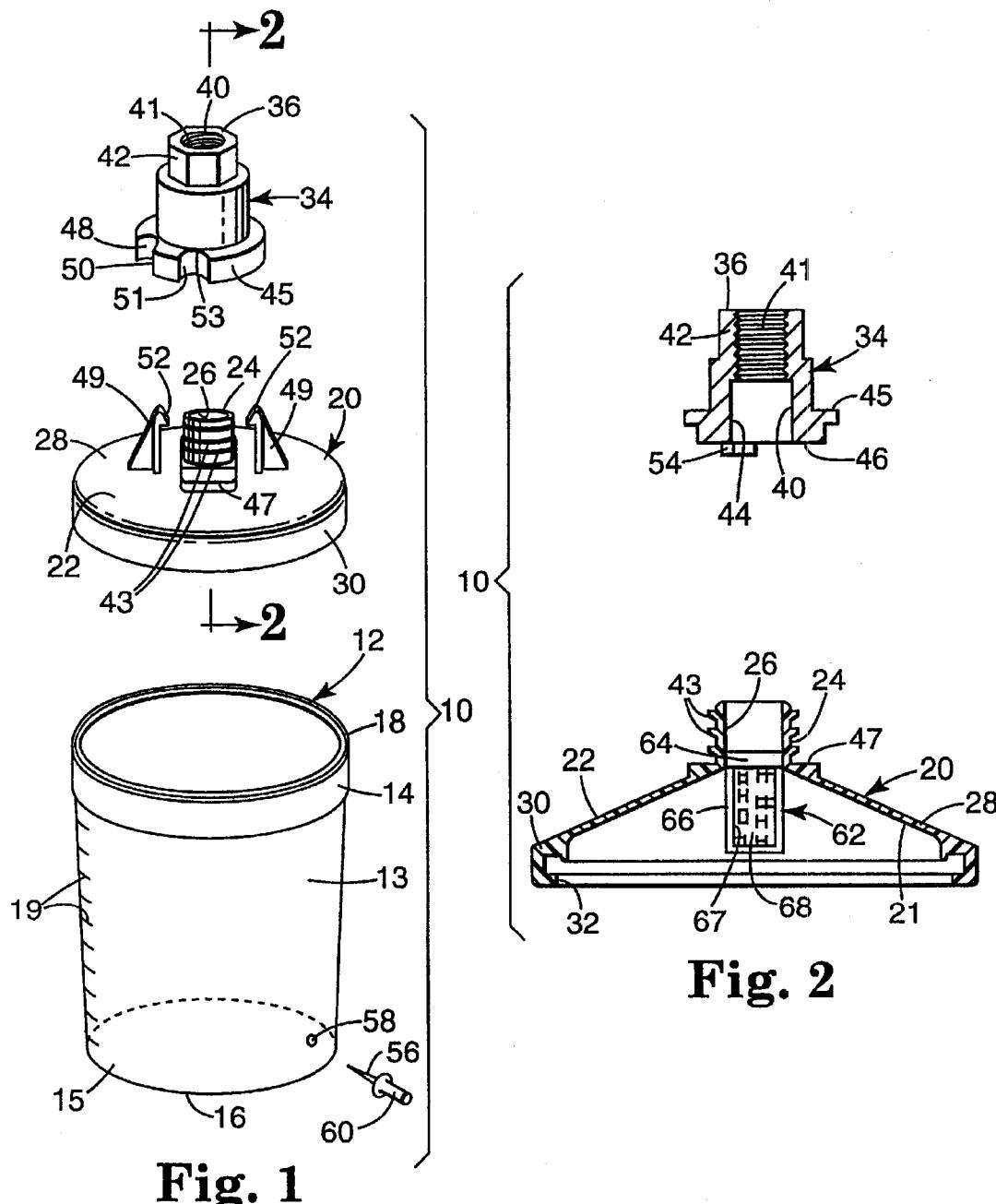


U.S. Patent

Jul. 22, 2003

Sheet 1 of 4

US 6,595,441 B2

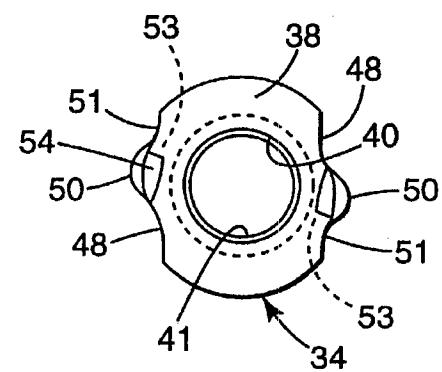
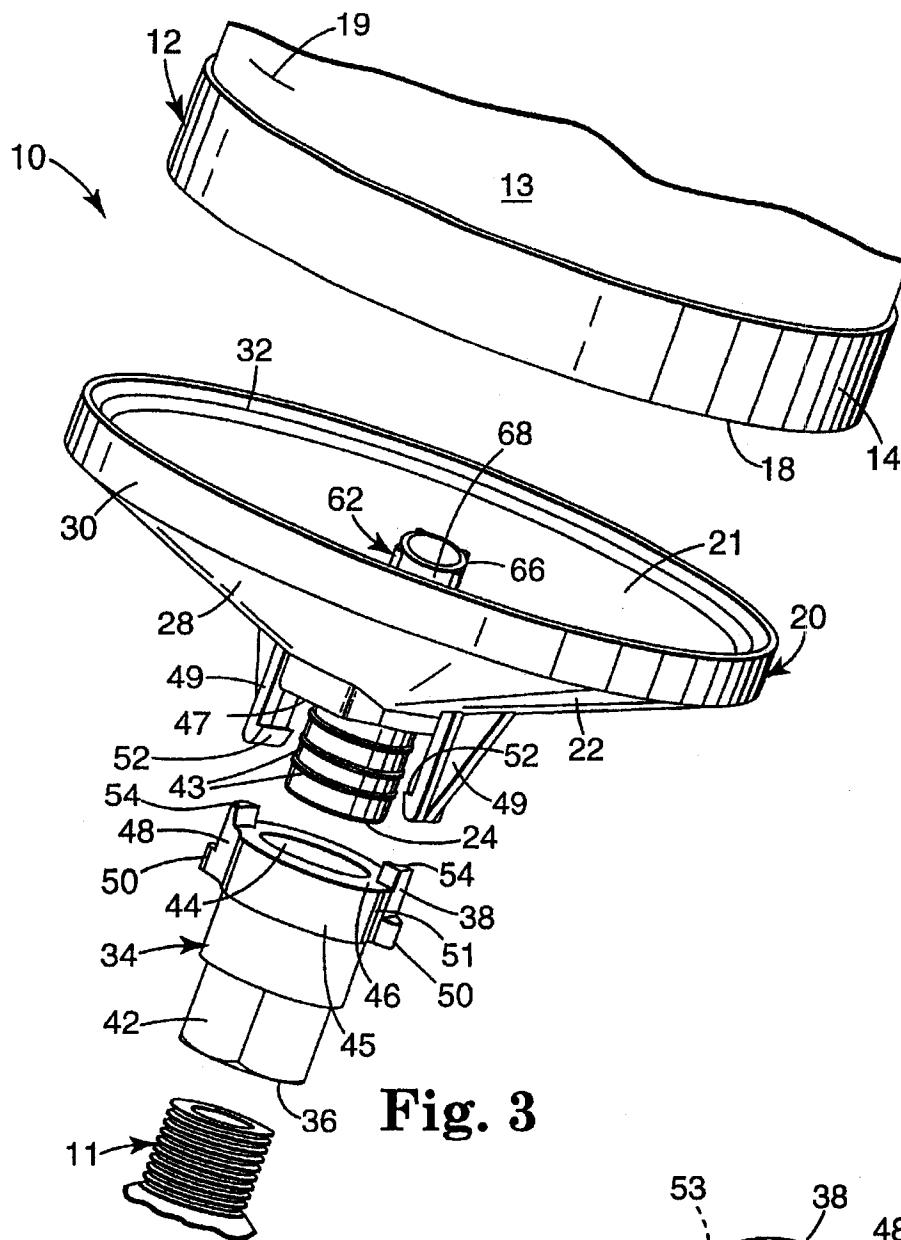


U.S. Patent

Jul. 22, 2003

Sheet 2 of 4

US 6,595,441 B2



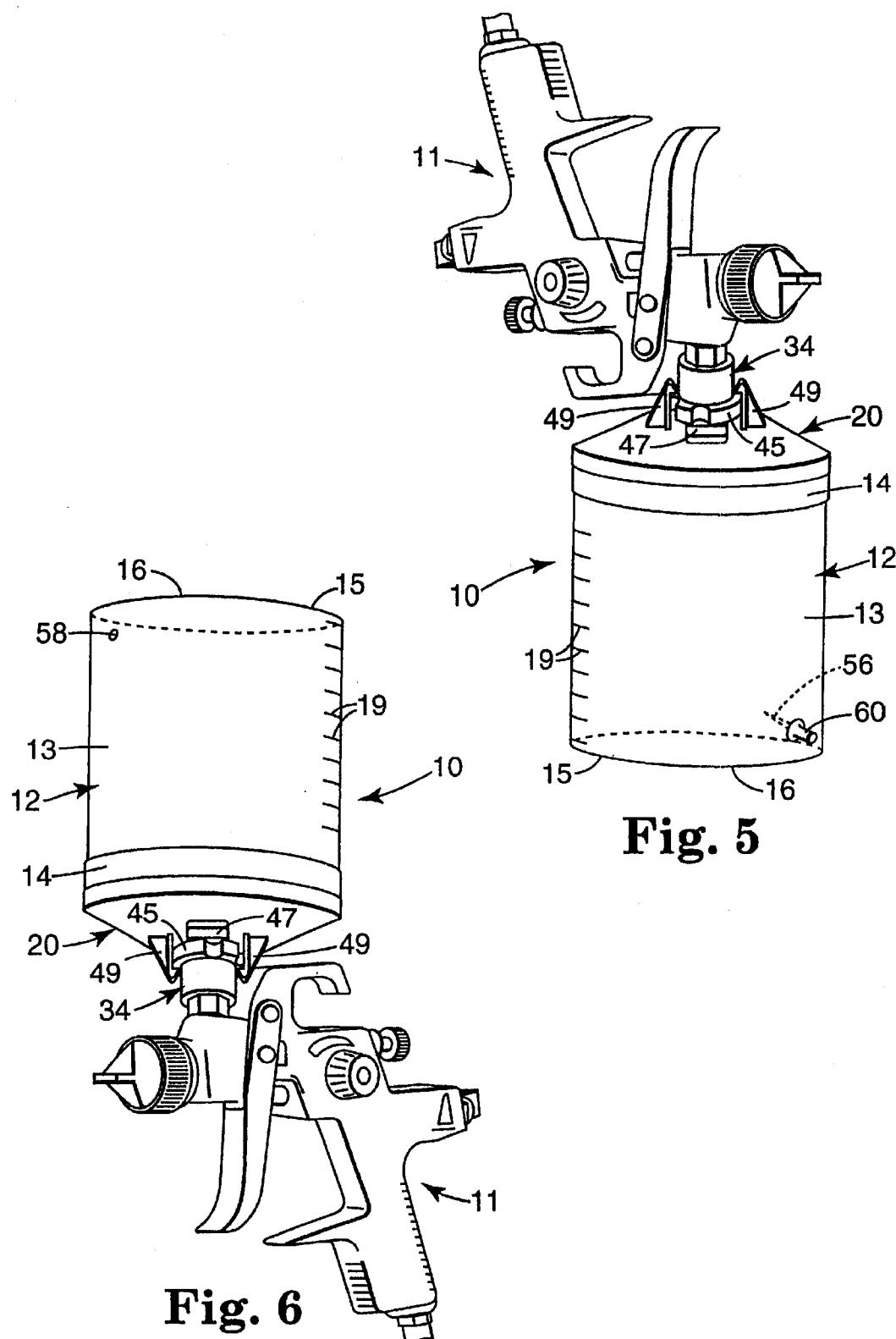
**Fig. 4**

U.S. Patent

Jul. 22, 2003

Sheet 3 of 4

US 6,595,441 B2

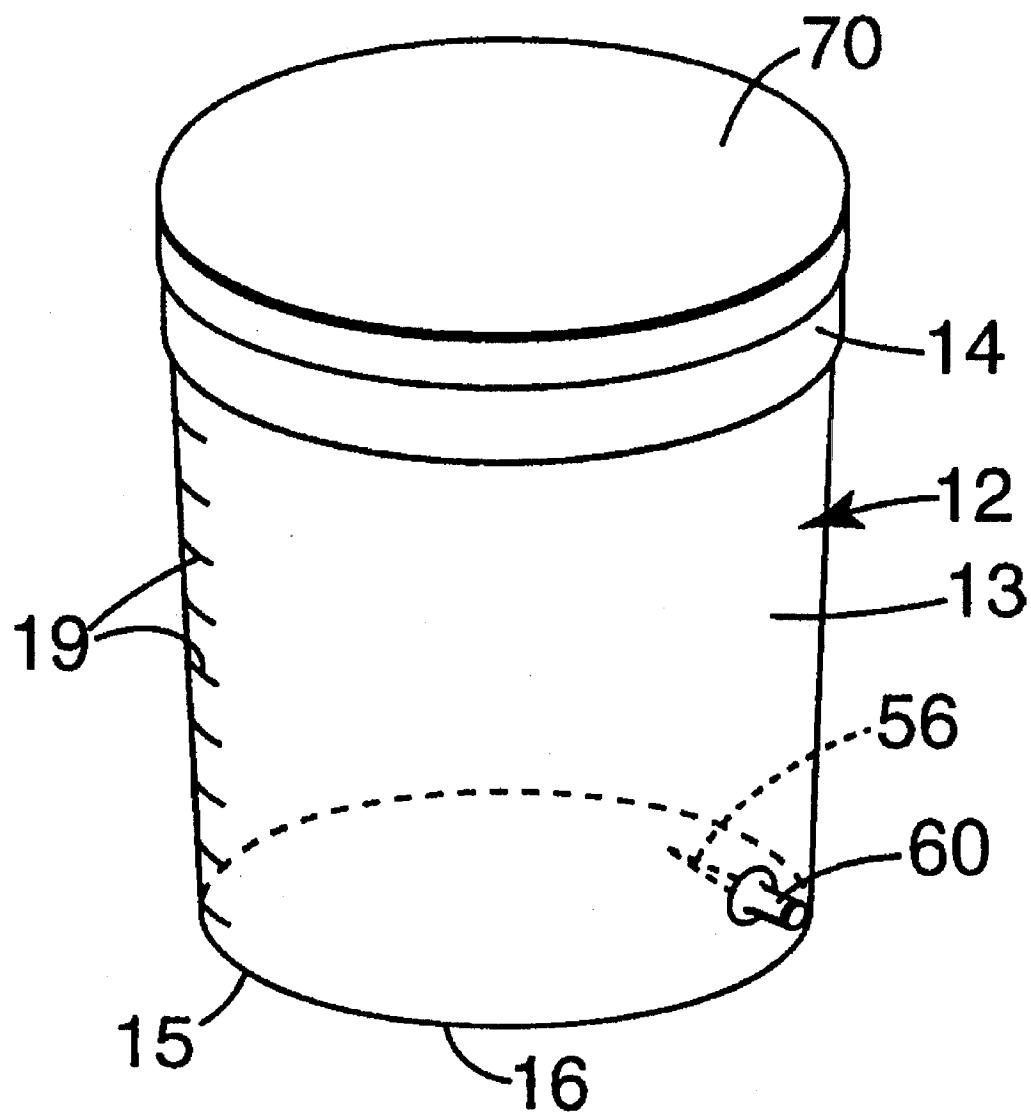


**U.S. Patent**

Jul. 22, 2003

Sheet 4 of 4

US 6,595,441 B2



**Fig. 7**

## US 6,595,441 B2

1

## MIXING CUP ADAPTING ASSEMBLY

## CROSS REFERENCE TO RELATED APPLICATION

This application is a continuation of U.S. patent application Ser. No. 09/374,794 filed Aug. 16, 1999.

## FIELD OF THE INVENTION

The present invention relates to the liquid supply assemblies for gravity fed liquid (e.g., paint) spraying devices or spray guns.

## BACKGROUND OF THE INVENTION

Various liquid supply assemblies have been described for use with gravity fed liquid (e.g., paint) spraying devices or spray guns, including those described in the international application published as International Publication Number WO 98/32539 on Jul. 30, 1998, the content whereof is incorporated herein by reference. The supply assembly including a collapsible liner that is described and claimed in that application should provide advantages over the prior art liquid supply assembly also described in that application.

## DISCLOSURE OF THE INVENTION

The present invention provides a liquid supply assembly for use with gravity fed liquid spraying devices that, like the liquid supply assembly described and claimed in WO 98/32539, should also provide advantages over the prior art liquid supply assembly described in that application.

According to the present invention there is provided a liquid supply assembly adapted for use on a gravity fed liquid spraying device that comprises (1) a mixing cup of stiff polymeric material that bears indicia on its side wall indicating the levels to which a plurality of different liquids should be sequentially poured into the cup to achieve a predetermined ratio between the liquids; (2) a first adapter comprising a central portion having a through opening and a transverse portion including a peripheral part defining a groove along its inner surface adapted for sealing engagement with a top end of the mixing cup; (3) a second adapter having a through opening, a first end portion adapted to releasably engage the inlet port of the spraying device; and a second end portion having a connector part adapted for releasable liquid tight engagement with a connector part on the central portion of the first adapter with the through openings in communication.

The mixing cup is of a known type commonly used in paint shops to mix different paints and/or to mix paint with solvent. Those liquids are mixed using indicia on the side walls of the mixing cup. That indicia indicates the levels to which two or three different liquids should be sequentially poured into the mixing cup to provide a predetermined ratio between those liquids, such indicia being provided for a plurality of different ratios. Prior to this invention, liquid from the mixing cup was poured into a liquid supply assembly for a spray gun, and if liquid remained after the spraying operation was complete, that remaining liquid was sometimes poured back into the mixing cup, an air tight cover was applied thereto, and the liquid (e.g., paint) was stored for future use in the covered mixing cup.

The present invention affords further use of that mixing cup as part of the liquid supply assembly for the spraying device. This eliminates the need to pour the mixed liquid (e.g., paint) out of the mixing cup prior to spraying, or to pour unsprayed liquid back into the mixing cup after the

2

spraying operation. Instead, the liquid is mixed in the mixing cup, remains in the mixing cup during the spraying operation when the mixing cup becomes part of the liquid supply assembly for the spraying device, and if unsprayed liquid remains after the spraying operation, it can be retained in the mixing cup which is then separated from the rest of the liquid supply assembly and can have a conventional air tight cover applied to it for storage.

A vacuum relief for the liquid supply assembly can be provided by inserting a tapered removable pin (e.g., a pin of the type sometimes called a "push pin") through the side wall of the mixing cup adjacent its bottom wall. That pin is removed during use of the mixing cup in the liquid supply assembly for the spraying device when the mixing cup is positioned with its bottom wall uppermost so that air can enter the cup through an air passageway formed by the pin above the liquid being supplied to the spraying device. Before and after the spraying operation when the cup is supported on its bottom wall that pin may be positioned in the passageway it forms to preclude liquid leaking out of the mixing cup through that passageway.

The liquid supply assembly can also include a removable filter assembly for filtering liquid leaving the mixing cup during the spraying operation.

## BRIEF DESCRIPTION OF DRAWING

The present invention will be further described with reference to the accompanying drawing wherein like reference numerals refer to like parts in the several views, and wherein:

FIG. 1 is an exploded perspective view of a liquid supply assembly according to the present invention;

FIG. 2 is an enlarged sectional view taken approximately along section line 2—2 of FIG. 1;

FIG. 3 is an enlarged exploded perspective view of the liquid supply assembly of FIG. 1 together with a fragment of a spraying device or spray gun to which the liquid supply assembly is adapted to be attached;

FIG. 4 is an end view of a second adapter included in the liquid supply assembly of FIG. 1;

FIG. 5 is a perspective view of the liquid supply assembly of FIG. 1 attached to an inverted spraying device or spray gun;

FIG. 6 is a perspective view of the liquid supply assembly of FIG. 1 attached to the spraying device as in FIG. 5 and inverted to the position used for spraying liquid with the spraying device; and

FIG. 7 is a perspective view of a mixing cup included in the liquid supply assembly of FIG. 1, which mixing cup has been separated from the rest of the liquid supply assembly and has had a conventional cover applied to it.

## DETAILED DESCRIPTION OF THE INVENTION

Referring now to the drawing there is illustrated a liquid supply assembly according to the present invention generally designated by the reference numeral 10. That liquid supply assembly 10 (as is illustrated in FIGS. 3, 5 and 6) can be used to supply liquid for a conventional gravity fed liquid spraying device or spray gun 11 (e.g., the spray gun commercially designated NR 95 that is available from Sata, Farbspritztechnik GmbH & Co., Kornwestheim, Germany).

As is best seen in FIGS. 1 and 3, the liquid supply assembly 10 includes a conventional paint mixing cup 12 of

## US 6,595,441 B2

3

stiff polymeric material (e.g., the polyethylene mixing cups commercially available from PPG, Cleveland, Ohio, which can be obtained in 8 ounce or 240 ml, or 16 ounce or 480 ml, or 24 ounce or 720 ml, or 32 ounce or 960 ml sizes). The paint mixing cup comprises a generally cylindrical side wall 13 having top and bottom ends 14 and 15, a bottom wall 16 extending across and closing the bottom end 15 of the side wall 13, and an outwardly projecting lip 18 around the top end 14 of the side wall 13. The top end 14 of the side wall 13 defines an opening into the cup 12. The side wall 13 bears indicia 19 indicating the levels to which two or three different liquids should be sequentially poured into the cup 12 through that opening to provide a predetermined ratio between those liquids, that indicia 19 being provided for a plurality of different ratios. The side wall 13 is sufficiently translucent to afford seeing the liquid level in the cup 12 through the side wall 13 which assists a person in adding liquids to the desired levels indicated by the indicia 19.

The liquid supply assembly 10 also includes a first adapter 20, (see FIGS. 1, 2, and 3) preferably molded of polymeric material (e.g., polyethylene), having opposite inner and outer major surfaces 21 and 22. The first adapter 20 comprises a central generally cylindrical projecting portion 24 having a through opening 26 and a transverse portion 28 including a peripheral part 30. The transverse portion 28 defines a groove 32 along its inner surface that is adapted for sealing engagement with the top end 14 and outwardly projecting lip 18 of the paint mixing cup 12.

A second adapter 34 (see FIGS. 1, 2, 3, and 4), also included in the liquid supply assembly 10, is preferably of metal (e.g., aluminum), has first and second spaced end portions 36 and 38, and has a through opening 40 extending through those end portions 36 and 38. The first end portion 36 of the second adapter 34 has internal threads 41 and six flatted wrench engageable surface portions 42 around its periphery, thereby being adapted to be releasably engaged with external threads on the inlet port of the gravity feed spray gun 11. The first adapter 20 and the second end portion 38 of the second adapter 34 have connector parts that are adapted for releasable liquid tight engagement with their through openings 26 and 40 in communication. Those connector parts include axially spaced radially outwardly projecting sealing rings 43 along the outer surface of the cylindrical portion 24, and a cylindrical inner surface 44 of the second adapter 34 that defines a cylindrical bore opening through the end of the second adapter 34 opposite the threads 41. That bore is adapted to receive the cylindrical portion 24 of the first adapter 20 in an engaged position with the sealing rings 43 in slightly compressed liquid tight engagement with the inner surface 44 defining the bore and with an end surface 46 on a collar 45 around the second end portion 38 of the second adapter 34 abutting a boss 47 in the first adapter 20 around the cylindrical portion 24. The collar 45 has major cylindrically concave recesses 48 along opposite sides of its periphery (see "FIG. 4") adapted to pass the distal ends of hook members 49 projecting from the transverse portion 28 of the first adapter 20 on opposite sides of the cylindrical portion 24 when the cylindrical portion 24 is pressed axially into the bore with the first and second adapters 20 and 34 in a first relative position at which the hook members 49 are aligned with the major recesses 48 in the collar 45. The first and second adapters 20 and 34 can then be rotated relative to each other to a second relative position to cause the resiliently flexible projecting hook members 49 to be deflected outwardly by, and to move around, cylindrically convex cam lobes 50 projecting radially outwardly on corresponding sides of the

4

major recesses 48 until the projecting hook members 49 are positioned in minor cylindrically concave recesses 51 in the collar 45 at which opposed inwardly projecting lips 52 on the distal ends of the projecting hook members 49 are engaged over a surface 53 of the collar 45 adjacent the first end 36 of the second adapter 34. Lugs 54 projecting axially past the end surface 46 of the collar 45 are adapted to move between positions engaging sides of the boss 47 on the first adapter 20 when the cylindrical portion 24 is in its engaged position in the bore defined by the inner surface 44, thereby limiting relative movement between the adapters 20 and 34 to movement to and between those first and second relative positions.

The liquid supply assembly 10 further includes a tapered, pointed, removable pin 56 (e.g., a pin of the type sometimes called a "push pin") extending through a passageway 58 in the side wall 13 of the cup 12 adjacent its bottom wall 16 (see FIGS. 1 and 5). On the end of the pin 56 opposite its point is a molded head 60 by which the pin 56 can be manually pressed through the side wall 13 to form the passageway 58. When the cup 12 is inverted to supply liquid to the spray gun 11 as is illustrated in FIG. 6, the pin 56 can be removed so that the passageway 58 will provide vacuum relief for the cup 12 by then allowing air to enter the cup 12 through the passageway 58 above the liquid (e.g., paint) being supplied to the spray gun 11. Before and after any such spraying operations that pin 56 may be positioned in the passageway 58 as is illustrated in FIG. 5 to preclude liquid within the cup 12 from leaking through the passageway 58 when the cup is supported on its bottom wall 16.

The combination 10 can also include a removable filter assembly 62 (see FIGS. 2 and 3) of a known commercially available type (e.g., the filter commercially designated "paint filter kit" that is commercially available from Standard Color, St. Paul, Minn.). The filter assembly 62 includes a stiff polymeric frame comprising a cylindrical outlet portion 64 having a cylindrical outer surface frictionally engaged within the inner surface defining the through opening 26 in the central projecting portion 24, which outlet portion 64 has a through opening. The frame of the filter assembly 62 further includes an inlet portion 66 projecting from the inner surface 21 of the transverse portion 28 of the first adapter 20. The inlet portion 66 has four axially extending rectangular inlet passageways 67 spaced around its periphery that communicate with the through opening in the outlet portion 64, and includes a filter screen 68 extending across the inner ends of those inlet passageways 67.

A method according to the present invention for providing a supply of mixed liquids for the gravity fed liquid spraying device 11 includes mixing the liquids in the mixing cup 12 using the indicia 19 to indicate the levels to which the liquids should be sequentially poured into the cup 12 to achieve the desired ratio between the liquids; engaging the peripheral part 30 of the first adapter 20 with the top end 14 of the mixing cup 12 containing the mixed liquids; engaging the first end 36 of the second adapter 34 with the inlet port of the liquid spraying device 11 (if this has not already been done); engaging the connector parts as described above (this being done with the mixing cup supported on its bottom wall and the spraying device inverted as illustrated in FIG. 3); and positioning the spraying device 11 as illustrated in FIG. 4 so that the bottom wall 16 of the mixing cup 12 is uppermost to feed the liquid in the mixing cup 12 to the spraying device 11 through the filter assembly 62 and the openings 26 and 40 in the adapters 20 and 34. That method can further include inserting the tapered pin 56 through the side wall 13 of the mixing cup 12 adjacent its bottom wall 16, and removing the

## US 6,595,441 B2

5

tapered pin 56 from the side wall 13 after the spraying device 11 is positioned with the bottom wall 16 of the mixing cup 12 uppermost as illustrated in FIG. 4 to feed the liquid in the mixing cup 12 to the spraying device. Such insertion of the tapered pin 56 provides the passageway 58 through the side wall 13 of the mixing cup 12 adjacent its bottom wall 16 so that air can flow into the cup 12 through the passageway 58 as the liquid is sprayed to restrict causing a vacuum in the mixing cup 12. If liquid remains in the mixing cup 12 after use of the liquid spraying device 11, the pin 56 can be inserted through the passageway 58 to restrict leakage of liquid through the passageway 58; the spraying device 11 can again be inverted to the position illustrated in FIG. 3, the connector parts can be disconnected, the first adapter 20 can be removed from the top end 14 of the mixing cup 12 containing the remaining liquid; a conventional cover 70 (see FIG. 7) can be applied to the top end 14 of the mixing cup 12, and the remaining liquid can be stored for future use in the covered mixing cup 12. The inexpensive first adapter 20 and the filter assembly 52 can then be disposed of so that cleanup of the liquid supply assembly 10 only requires cleaning the second adapter 34, which is cleaned with the spray gun 11.

The present invention has now been described with reference to one embodiment thereof. It will be apparent to those skilled in the art that many changes can be made in the embodiment described without departing from the scope of the present invention. For example, any of a number of different types of connectors can be used between the adapters 20 and 34. Thus, the scope of the present invention should not be limited to the structures and methods described in this application, but only by the structures and methods described by the language of the claims and the equivalents thereof.

What is claimed is:

1. An assembly for connecting a liquid supply to an inlet port on a gravity fed liquid spraying device, said assembly comprising:

a first adapter having first and second end portions and a through opening extending through said end portions, said first end portion of said first adapter including means for communicating with the liquid supply;

a second adapter having first and second end portions, and a through opening extending through said end portions of said second adapter, said first end portion of said second adapter including means for engaging the inlet port of the gravity feed spray gun;

the second end portions of the adapters having connector parts adapted for releasable liquid tight engagement with the through openings in the adapters in communication;

said connector parts on said first adapter including a projecting portion having an outer surface and axially spaced proximal and distal ends, and projecting resiliently flexible hook members on opposite sides of the projecting portion, said hook members having distal ends and opposed radially inwardly projecting lips on said distal ends; and

said connector parts on said second adapter including an inner surface in the second end portion of the second adapter defining a bore opening through the end of the second adapter and adapted to receive the projecting portion of the first adapter in an engaged position with the outer surface of the projecting portion in liquid tight engagement with the inner surface, and a collar around the second end portion of the second adapter,

6

said collar having major recesses along opposite sides adapted to pass the distal ends of the projecting hook members of the first adapter when the projecting portion is pressed axially into the bore with the first and second adapters in a first relative position at which the hook members are aligned with the major recesses in the collar, said collar having retaining surfaces facing the first end of the second adapter extending along corresponding sides of said major recesses, and said first and second adapters being rotatable relative to each other to a second relative position when said adapters are in said first relative position to cause the lips on hook members to be engaged with said retaining surfaces on the collar, said collar including cam lobes projecting radially outwardly on corresponding sides of the major recesses, and minor recesses in the collar on the sides of the cams opposite the major recesses, said retaining surfaces extending along said second recesses, and rotation of said first and second adapters to said second relative position causing the resiliently flexible projecting hook members to be deflected radially outwardly by, and to move around said cam lobes until the projecting hook members are positioned in said minor recesses in the collar at which position said inwardly projecting lips on the distal ends of the projecting hook members are engaged with said retaining surfaces of the collar.

2. An assembly according to claim 1, further including the liquid supply, said liquid supply comprising a mixing cup of stiff polymeric material comprising a side wall having top and bottom ends, and a bottom wall extending across and closing the bottom end of said side wall, said top end of said side wall defining an opening into said cup, and said side wall bearing indicia indicating the levels to which a plurality of different liquids can be sequentially poured into the cup to achieve a predetermined ratio between the liquids;

said means on said first end portion of said second adapter for communicating with the liquid supply comprises a transverse portion of said second adapter including a peripheral part defining a groove receiving said top end of said mixing cup in sealing engagement with said peripheral part; and

said assembly further includes a tapered removable pin extending through said side wall of said mixing cup adjacent said bottom wall, said pin having been pressed through the side wall to form a passageway through the side wall, being positioned in the passageway to restrict any liquid in the mixing cup from moving through the passageway, being removable from the passageway to allow air to move through the passageway into the mixing cup adjacent said bottom wall, and after such removal being again positionable in the passageway to again restrict any liquid in the mixing cup from moving through the passageway.

3. An assembly according to claim 1, wherein said first adapter is of polymeric material, said projecting portion of said first adapter includes axially spaced radially outwardly projecting sealing rings along said outer surface, said first adapter has a boss around the proximal end of the projecting portion, and in said engaged position the sealing rings are in slightly compressed liquid tight engagement with the inner surface, and the collar around the second end portion of the second adapter has an end surface abutting the boss of the first adapter.

4. An assembly for use on a gravity fed liquid spraying device having an inlet port, said assembly comprising: a mixing cup of stiff polymeric material comprising a side wall having top and bottom ends, and a bottom wall

extending across and closing the bottom end of said sidewall, said top end of said side wall defining an opening into said cup, and said side wall bearing indicia indicating the levels to which a plurality of different liquids can be sequentially pawed into the cup to achieve a predetermined ratio between the liquids; 5  
an adapter assembly for connecting the mixing cup to the inlet port on the gravity fed liquid spraying device, said adapter assembly comprising:  
a first adapter having first and second end portions and 10 a through opening extending through said end portions of said first adapter, said first end portion of said first adapter comprising a transverse portion including a peripheral part defining a groove along said inner major surface receiving aid top end of said mixing cup in sealing engagement with said peripheral part;  
a second adapter having first and second end portions, 15 and a through opening extending through said end portions of said second adapter, said first end portion of said second adapter including means for engaging the inlet port of the gravity feed spray gun; the second end portions of the adapters having connector parts adapted for releasable liquid tight engagement with the through openings in the adapters in communication;  
said connector parts on said first adapter including a 20 projecting portion having a cylindrical outer surface, axially spaced proximal and distal ends, and axially spaced radially outwardly projecting sealing rings along said cylindrical outer surface, a boss around the proximal end of the projecting portion, and projecting resiliently flexible hook members on opposite sides of the projecting portion, said hook members having distal ends and opposed radially inwardly projecting lips on said distal ends; and  
said connector parts on said second adapter including a 25 cylindrical inner surface in the second end portion of the second adapter defining a bore opening through the end of the second adaptor and adapted to receive the projecting portion of the of the first adapter in an engaged position with the sealing rings in slightly compressed liquid tight engagement with the inner surface, and a collar around the second end portion of the second adapter having an end surface adapted to abut the boss of the first adapter when the projecting portion of the first adapter is in said engaged position, said collar having major recesses along opposite sides adapted to pass the distal ends of the projecting hook members of the first adapter when the projecting portion is pressed axially into the bore with the first and second adapters in a first relative position at which the hook members are aligned with the major recesses in the collar, said collar having retaining surfaces facing the first end of the second adapter and extending along corresponding sides of 30 said major recesses, and said first and second adapters being rotatable relative to each other to a second relative position when said adapters are in said first relative position to cause the lips on hook members to be engaged with the retaining surfaces on the collar, said collar including cam lobes projecting radially outwardly on corresponding sides of the major recesses, and minor recesses in the collar on the sides of the cams opposite the major recesses, said retaining surfaces are along said second recesses, and rotation of said first and second adapters to said second relative position causes the resiliently flexible projecting hook members to be

deflected outwardly by, and to move around said cam lobes until the projecting hook members are positioned in said minor recesses in the collar at which said inwardly projecting lips on the distal ends of the projecting hook members are engaged over said retaining surfaces of the collar,  
said assembly further including a tapered removable pin extending through said side wall of said mixing cup adjacent said bottom wall, said pin having been pressed through the side wall to form a passageway through the side wall, being positioned in the passageway to restrict any liquid in the mixing cup from moving through the passageway, being removable from the passageway to allow air to move through the passageway into the mixing cup adjacent said bottom wall, and after such removal being again positionable in the passageway to again restrict any liquid in the mixing cup from moving through the passageway.  
5. An assembly for use on a gravity fed liquid spraying device having an inlet port, said assembly comprising: a 20 container of polymeric material having a portion defining an inlet opening; an adapter assembly for connecting the container to the inlet port on the gravity fed liquid spraying device, said adapter assembly comprising: a first adapter of polymeric material having first and second end portions and a through opening extending through said end portions of said first adapter, said first end portion of said first adapter comprising a transverse portion including a peripheral part; means for releasably attaching said container to said peripheral part with said portion defining said inlet opening in sealed engagement with said peripheral part; a second 25 adapter having first and second end portions, and a through opening extending through said end portions of said second adapter, said first end portion of said second adapter including means for engaging the inlet port of the gravity feed spray gun; the second end portions of the adapters having connector parts adapted for releasable liquid tight engagement with the through Openings in the adaptors in communication; said connector parts on said first adapter including a projecting portion having an outer surface, axially spaced proximal and distal ends, and axially spaced radially outwardly projecting sealing rings along said outer suffice, a 30 boss around the proximal end of the projecting portion, and projecting resiliently flexible hook members on opposite sides of the projecting portion, said book members having distal ends and opposed radially inwardly projecting lips on said distal end; and maid connector parts on said second 35 adapter including a cylindrical inner surface in the second end portion of the second adapter defining a bore opening through the end of the second adapter and adapted to receive the projecting portion of the of the first adapter in an engaged position with the sealing rings in slightly compressed liquid tight engagement wit the inner surface, and a 40 collar around the second end portion of the second adapter having an end surface adapted to abut the boss of the first adapter when the projecting portion of the first adapter is in said engaged position, said collar having major recesses along opposite sides adapted to pass the distal ends of the 45 projecting hook members of the first adapter when the projecting portion is pressed axially into the bore with the first and second adapters in a first relative position at which the hook members are aligned with the major recesses in the collar, said collar having retaining surfaces facing the first end of the second adapter and extending along corresponding sides of 50 said major recesses, and said first and second adapters being rotatable relative to each other to a second relative position when said adapters are in said first relative position to cause the lips on hook members to be engaged 55 with the retaining surfaces on the collar.  
60  
65

UNITED STATES PATENT AND TRADEMARK OFFICE  
**CERTIFICATE OF CORRECTION**

PATENT NO. : 6,595,441 B2  
DATED : July 22, 2003  
INVENTOR(S) : Petrie, Robert M.

Page 1 of 2

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Title page.

Item [56], **References Cited**, U.S. PATENT DOCUMENTS, delete "Nelburg" and insert in place thereof -- Neiburg --.

Column 6.

Line 25, delete "Inwardly" and insert in place thereof -- inwardly --.  
Line 26, delete "book" and insert in place thereof -- hook --.  
Line 33, delete "wail" and insert in place thereof -- wall --.  
Line 35, delete "pound" and insert in place thereof -- poured --.  
Line 58, delete "scaling" and insert in place thereof -- sealing --.

Column 7.

Line 2, delete "sidewall" and insert in place thereof -- side wall --.  
Line 5, delete "pawed" and insert in place thereof -- poured --.  
Line 15, delete "aid lop" and insert in place thereof -- said top --.  
Line 24, delete "fir" and insert in place thereof -- for --.  
Line 39, delete "adaptor" and insert in place thereof -- adapter --.

Column 8.

Line 2, delete "camobes" and insert in place thereof -- cam lobes --.  
Line 5, delete "arc" and insert in place thereof -- are --.  
Line 24, delete "trough" and insert in place thereof -- through --.  
Line 36, delete "Openings" and insert in place thereof -- openings --.  
Line 36, delete "adaptors" and insert in place thereof -- adapters --.  
Line 39, delete "suffice" and insert in place thereof -- surface --.  
Line 42, delete "book" and insert in place thereof -- hook --.  
Line 44, delete "end;," and insert in place thereof -- ends; --.  
Line 44, delete "maid" and insert in place thereof -- said --.

UNITED STATES PATENT AND TRADEMARK OFFICE  
**CERTIFICATE OF CORRECTION**

PATENT NO. : 6,595,441 B2  
DATED : July 22, 2003  
INVENTOR(S) : Petrie, Robert M.

Page 2 of 2

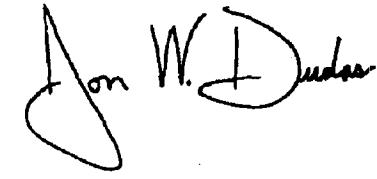
It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Column 8 (cont'd)

Line 50, delete "wit" and insert in place thereof -- with --.  
Line 59, delete "book" and insert in place thereof -- hook --.

Signed and Sealed this

Twenty-eighth Day of September, 2004



JON W. DUDAS  
*Director of the United States Patent and Trademark Office*